Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the

application.

Listing of Claims:

1. (Cancelled)

2. (Currently Amended)   [[The]] An object recognizing apparatus according to claim

1 recognizing a target object image from images, comprising:

pixel value distribution extracting means for extracting corresponding pixel value

distributions of various regions in said object image and a background image existing as a

background of said object image; and

recognizing means for recognizing said object image based on difference in pixel value

distributions of various regions extracted by said pixel value distribution extracting means,

wherein

said pixel value distribution extracting means divides said background image and said

object image into a number of blocks, respectively, calculates distance between pixel value

distributions of different blocks to find a distance map as a set of distance values between blocks,

represents an element extracted from each distance map as a distribution of distance vector of a

prescribed dimension, and calculates a discrimination axis for discriminating distribution of the

distance value vector of the background image and the target image, respectively.

3. (Currently Amended)   The object recognizing apparatus according to claim 2

claim 1, wherein

said pixel value distribution extracting means removes lower contribution elements from said calculated discrimination axis, and calculates again the discrimination axis to reduce the number of dimensions.

4. (Original) The object recognizing apparatus according to claim 2, wherein

said recognizing means calculates the distance value vector for each portion of an input image, and determines that said object image is detected, when a value calculated based on the calculated distance value vector and the discrimination axis obtained by said pixel value distribution extracting means is not lower than a prescribed threshold value.

5. (Original) The object recognizing apparatus according to claim 4, wherein

said recognizing means calculates covariance matrix and average vector of pixel value for every possible block in said input image, and thereafter calculates said distance value vector with the number of dimensions reduced.

6. (Original) The object recognizing apparatus according to claim 4, wherein

said recognizing means generates a plurality of images having different resolutions from said input image, and performs recognizing process on said images of different resolutions.

7. (Cancelled)

8. (Currently Amended) [[The]] A method of recognizing a target object image from images, comprising according to claim 7

the first step of extracting corresponding pixel value distributions of various regions in said target image and a background image existing as a background of said target image, and

the second step of recognizing said object image based on difference in pixel value distributions of various regions extracted in said first step, wherein

in said first step, said background image and said object image are divided into a number of blocks, respectively, distance between pixel value distributions of different blocks is calculated to find a distance map as a set of distance values between blocks, an element extracted from each distance map is represented as a distance vector distribution of a prescribed dimension, and a discrimination axis is calculated for discriminating distribution of distance value vectors of the background image and the object image, respectively.

9. (Currently Amended) The method of recognizing an object according to claim 8 claim 7, wherein

in said first step, lower contribution elements are removed from said calculated discrimination axis, and the discrimination axis is calculated again to reduce the number of dimensions.

10. (Original) The method of recognizing an object according to claim 8, wherein

in said second step, a distance value vector is calculated for each portion of the input image, and it is determined that said target object image is detected when a value calculated

5

based on the calculated distance value vector and the discrimination axis calculated by said pixel value distribution extracting means is not lower than a prescribed threshold value.

11. (Original) The method of recognizing an object according to claim 10, wherein in said second step, a covariance matrix and an average vector of pixel values are calculated for every possible block in said input image and, thereafter, said distance value vector is calculated with the number of dimensions reduced.

12. (Original) The method of recognizing an object according to claim 10, wherein in said second step, a plurality of images of different resolutions are generated from said input image, and recognition process is performed on said images of different resolutions.